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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,902	02/25/2005	Kazuhiro Yagishita	CU-4101 RJS	9193
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LADAS & PARRY LLP 224 SOUTH MICHIGAN AVENUE SUITE 1600 CHICAGO, IL 60604			EXAMINER GOLOBOY, JAMES C	
			ART UNIT 1797	PAPER NUMBER
			MAIL DATE 02/04/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/525,902	<b>Applicant(s)</b> YAGISHITA, KAZUHIRO	
	<b>Examiner</b> James Goloboy	<b>Art Unit</b> 1797	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. All outstanding rejections are overcome by applicant's amendments filed 11/9/07. New grounds of rejection necessitated by the amendment are set forth below.

#### ***Claim Rejections - 35 USC § 103***

2. Claims 1 and 3-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robson in view of Emert and Shanklin (U.S. Pat. No. 6,008,165)

In paragraphs 1-2, Robson discloses a lubricating composition for parts of an internal combustion engine, including valve trains as recited in claim 9. In paragraph 36 Robson teaches that the sulfur content is at most 2000 ppm (0.2%) by mass, matching the range recited in claim 1. Robson teaches that the sulfur content is preferably zero, also meeting the sulfur content limitations of claims 5, 7, and 14, and also the limitations of the base oil of claim 1. In paragraph 64 Robson teaches that Group III base oils, which meet the limitations of the base oil of claim 1, are preferred base oils. In paragraph 38 Robson teaches that the boron content is preferably greater than 2000 ppm (0.2%) by mass, and not greater than 3000 ppm (0.3%) by mass, falling within the range recited for component (A) of claim 1. In paragraph 33 Robson teaches that the phosphorus content is more preferably zero, meeting the limitation of claims 7 and 14 and implying that the composition contains no metal salts of dithiophosphoric acid, as recited in claim 1.

In paragraph 80, Robson teaches that the composition comprises a metal-based detergent, as recited in claim 3 and in paragraph 95 teaches that the metal-based

detergent is preferably a salicylate, which is substantially sulfur-free as in claims 5 and 13. While Robson does not teach the metal ratio of the detergent, Robson does teach in paragraph 96 that the TBN of the detergent is in the range of 15 to 600. As a TBN of 15 is indicative of a metal ratio of about 1, the range of metal ratios of the detergents of Robson therefore overlaps or falls within the range recited in claims 4 and 12.

In Tables 1 and 3 (examples 1-6), Robson discloses that a magnesium detergent is added in an amount sufficient to provide about 380 ppm (0.038%) by weight of magnesium, within the range recited for component (B) of claim 11.

The differences between Robson and the currently presented claims are:

i) Robson discloses in paragraph 134 that the composition can further contain an antioxidant, but does not specifically disclose ashless antioxidants, nor does Robson disclose the concentration of antioxidant. This relates to component (B) of claim 1.

ii) Robson also discloses in paragraph 134 that the composition can comprise a dispersant, but does not specifically disclose ashless dispersants, nor does Robson disclose the concentration of dispersant. This relates to claim 6.

iii) In paragraphs 68 and 73 Robson teaches that the boron content may arise from a borate ester, but does not disclose the structures of suitable esters. This relates to component (A) of claim 1.

With respect to i), Emert teaches in column 70 lines 48-57 that lubricating compositions preferably contain an ashless antioxidant, and in the table in column 81 (approximately line 23) teaches that compositions contain 0.01 to 5% by weight the antioxidant, meeting the limitations of claim 1(B).

With respect to ii), Emert teaches from column 38 line 47 through column 40 line 43 that the composition can contain an ashless dispersant, as in claims 6 and 11. While Emert does not explicitly disclose the nitrogen content of the composition, Emert does disclose in the table in column 81 (approximately line 24) that the composition comprises 0.1 to 10% by weight of the dispersant. Given that the molecular weight of the polymer used in the dispersant of Emert is preferably no greater than 4,000 (column 12 line 9), and it is reacted with a polyamine to form the dispersant, it is clear that the nitrogen content of the composition will overlap the range recited in claims 6 and 11.

With respect to iii), Shanklin discloses in column 7-11 a lubricating composition for an engine, and from column 41 line 45 through column 42 line 19 discloses a borate ester additive for the composition which meets the limitations of the borate ester of both formulas (1) and (2) of component (A) of claim 1.

The use of the ashless antioxidants and ashless dispersant of Emert in the composition of Robson therefore meets the limitations of claims 1-7, 9, and 11-14. The limitation of claim 8 stating that the lubricating composition is for an internal combustion engine using a fuel having a sulfur content of 50 ppm by mass or less is merely an intended use recitation, and it is the examiner's position that the composition of Robson and Emert is capable of use in such an engine and therefore meets the claim. Additionally, that the use of these additives intrinsically improves the long drain performance of the composition, meeting claim 10 as all the structural limitations of the claim are met.

It would have been obvious to one of ordinary skill in the art to add the antioxidants and dispersants of Emert to the composition of Robson, in order to prevent oxidative degradation of the oil, and prevent the formation of deposits. It would have been obvious to one of ordinary skill in the art to add the borate ester of Shanklin to the composition of Robson, as Shanklin teaches in the table of column 43-46 that addition of the borate ester eliminates lead corrosion in engine parts, and also reduces copper corrosion in many cases.

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Robson in view of Emert and Shanklin as applied to claims 1, 3-7 and 9-15 above, and further in view of Curtis (U.S. Pat. No. 2003/0220209).

The discussion of Robson, Emert, and Shanklin in paragraph 2 above is incorporated here by reference. Robson, Emert, and Shanklin disclose a lubricating composition used in an internal combustion engine meeting the limitations of claim 1, but does not disclose an internal combustion engine having a sulfur content of 50 ppm or less.

Curtis, in paragraph 1, discloses a lubricating composition for a diesel engine. In the reference's claim 1 Curtis discloses that the diesel engine may use a low-sulfur diesel fuel, and in paragraph 12 Curtis teaches that a low-sulfur diesel fuel contains 15 ppm or less of sulfur, within the range recited in claim 8. In paragraph 18 Curtis discloses that the composition can contain an antioxidant, and in paragraph 63 teaches that the composition can include a borate ester, the same additives that are present in

the composition of Robson, Emert, and Shanklin. In paragraphs 3 and 7 Curtis teaches that an amide of a carboxylic acid is also a useful additive.

It would have been obvious to one of ordinary skill in the art to include the amide of Curtis in the composition of Robson, Emert, and Shanklin, and to use the resulting composition in a diesel engine taking low-sulfur diesel fuel, as Curtis teaches that a composition with similar components to those used by Robson, Emert, and Shanklin is useful in such an engine.

### ***Response to Arguments***

4. Applicant argues that the newly added limitation of claims 1 and 6 regarding the structure of the boric acid ester overcomes the prior art. However, the combination of Shanklin with Robson and Emert meets the new limitation. Applicant also argues that the newly added limitation regarding the aromatic content of the base oil distinguishes over Robson, because Robson teaches that Group I base oils are also preferred base oils. This does not constitute a teaching away from the use of Group III base oils, since both are taught as preferred. If anything, given Robson's teaching that the sulfur content of the composition is preferably zero, one of ordinary skill in the art would have been led to select Group III base oils over Group I base oils.

### ***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Goloboy whose telephone number is 571-272-2476. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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